

REMARKS

Claims 42 and 69 are amended herein to improve the form of the claim and not for reasons related to patentability. Claims 1 and 51 are amended, claim 28 is withdrawn and claim 70 is added herein. Upon entry of this amendment, claims 20-27, 29-43, 51-65 and 70 will be pending for consideration.

The following remarks are responsive to the Office action dated April 20, 2006.

General Remarks

The undersigned wishes to thank the Examiner for the phone conference of July 13, 2006 during which the Examiner's characterization of the cite reference, U.S. Patent No. 5,536,264 (Hsueh et al.) was discussed. In particular, with respect to the rejection of claim 20, the Examiner expressed her position of reliance on the disclosure by Hsueh et al. at column 54, lines 60-65 that an absorbent core 42 (e.g., illustrated in Figs. 26 and 28 as incorporated into an absorbent assembly) may comprise more than one of the absorbent composites disclosed by Hsueh et al., with one absorbent composite thereby corresponding to the absorbent member recited in claim 20 and another absorbent composite corresponding to the reinforcing member recited in claim 20.

While the Office's position with respect to independent claims 32 and 51 is not expressly set forth in the Office action, the Examiner and the undersigned also discussed her position with respect to these claims.

Response to Claim Rejections

Claim 20

Claim 20 is as amended herein is directed to an absorbent structure comprising an absorbent member that is at least partially made of fibers, and a reinforcing member at least partially embedded in the absorbent member for maintaining the structural integrity of the absorbent member. The reinforcing member is comprised of a first set of substantially parallel strands and a second set of strands that cross the first set of strands at junctions in a non-orthogonal relationship thereby defining openings in the reinforcing member. At least some of the fibers of the absorbent member extend through the openings in the reinforcing member and are entangled with other fibers of the absorbent member.

Claim 20 is submitted to be non-obvious in view of and patentable over the references of record, and in particular Hsueh et al., in that whether considered alone or in combination the references fail to teach or suggest an absorbent structure comprised of the combination of an absorbent member that is at least partially made of fibers, a reinforcing member at least partially embedded in the absorbent member and constructed of first and second strands arranged in a non-orthogonal relationship to define openings in the reinforcing member, and at least some of the fibers of the absorbent member extending through openings in the reinforcing member and entangling with other fibers of the absorbent member.

Hsueh et al. disclose an absorbent composite comprising a porous macrostructure of absorbent gelling particles and a substrate. With reference to Fig. 1, the absorbent composite 70 comprises a substrate layer 72 bonded to an absorbent layer 71 (the macrostructure layer). The absorbent layer is formed from

of a plurality of absorbent gelling particles that are interconnected by intermolecular cross-linking of the absorbent molecules. In the embodiment of Fig. 9, the absorbent gelling particles are interconnected by cross-linking to form a net like configuration of the macrostructure layer 81. The substrate layer 82 (Fig. 9) is formed of a cellulosic material, such as a cellulose foam layer, and is chemically bonded to the macrostructure (e.g., in face-to-face relationship) by a cross-linking agent.

Figures 4 and 5 of Hsueh et al. illustrate a multilayered absorbent composite 70 in which a plurality of substrate layers 72 a,b,c,d,e are intermittently attached or bonded to a plurality of absorbent macrostructure layers 71 a,b,c,d, e.g., in a layered approach. As best understood in view of the undersigned's phone conference with the Examiner, the Office's characterization of this disclosure is that one middle absorbent composite (e.g., the combination of macrostructure layer 71b and substrate 72b) is equated to the reinforcing member recited in claim 20 while upper and/or lower composites (e.g., upper composite formed by layers 71a, 72a and lower composite 71c and 72c) comprise the recited absorbent member.

Irrespective of the Office's characterization of Hsueh et al., the cited reference fails to disclose or even suggest fibers of the absorbent member passing through openings in the reinforcing member and being entangled with other fibers of the absorbent member as recited in amended claim 20. In particular, Hsueh et al. teach chemically bonding the macrostructure layer to the substrate layer. See, e.g., column 23, lines 12-65. Such chemical bonding clearly does not result in absorbent member fibers passing through the reinforcing member and becoming entangled with other fibers of the absorbent member.

Moreover, there is nothing in Hsueh et al. that would motivate one skilled in the art to replace the chemical bonding taught by Hsueh et al. with the passing of absorbent member fibers through the reinforcing member and entangling these fibers with other fibers of the absorbent member. Indeed, the absorbent composite relies on the chemical bonding to also interconnect the gel particles of the macrostructure layer.

For these reasons, claim 20 as now presented is submitted to be non-obvious in view of and patentable over the references of record.

Claims 21-27 and 29-31 depend directly or indirectly from claim 20 and are submitted to be non-obvious in view of and patentable over the reference of record for at least the same reasons as claim 20.

Claim 32

Claim 32 is directed to an absorbent structure that comprises an absorbent member that is at least partially made of fibers and a reinforcing member for maintaining the structural integrity of the absorbent structure that is at least partially embedded in the absorbing member. Claim 32 further specifies that the reinforcing member is connected to the absorbent member and at least partially gathers the absorbent member to form rugosities on the surface of the absorbent member.

Claim 32 is submitted to be non-obvious in view of and patentable over the references of record, and in particular Hsueh et al., in that whether considered alone or in combination the references fail to disclose an absorbent structure in which a reinforcing member is at least partially embedded in a fibrous absorbent member, with the reinforcing member being connected to the absorbent member and at least partially gathering the

absorbent member to form rugosities on the surface of the absorbent member.

Indeed, Hsueh et al. lacks any disclosure or even a suggestion that the absorbent composite 70 (e.g., the combination of layers 71a and 72a in Fig. 5) may be gathered by a reinforcing member to form rugosities on the surface of the absorbent member. As best understood from the undersigned's phone conference with the Examiner, the Office's position is that the absorbent composite of Hsueh et al. is stretchable and as a result of swelling of the gel particles upon absorbing liquid, rugosities will form in the surface of the absorbent composite.

However, Hsueh et al. does not appear to disclose that the absorbent composite is stretchable. And in any event, swelling of the gel particles would, at best, result in stretching of the absorbent composite which would tension the surface of the composite, not gather and form rugosities therein. Moreover, once the gel particles are swelled, no retraction of the composite can occur and even if it could, it would only retract to its initial, dry state that is also ungathered and has no rugosities. Also, at column 7, lines 6-23 in reference to the embodiment of Fig. 9, where the absorbent composite is formed as a net-like structure it has a plurality of voids. Upon wetting of the gel particles, the particles swell and expand into the void space so that "planar expansion of the absorbent composite can be minimized."

Thus, there is no teaching or suggestion found anywhere in Hsueh et al. to provide a reinforcing member that gathers the absorbent member to form rugosities in the outer surface of the absorbent member.

For these reasons, claim 32 is submitted to be non-obvious in view of and patentable over the references of record.

Claims 33-43 and new claim 70 depend directly or indirectly from claim 32 and are submitted to be patentable over the references of record for at least the same reasons as claim 32.

Claim 39

Claim 39 depends from claim 32 and further recites that the reinforcing member is comprised of strands arranged to cross over one another at junctions to define openings in the web and that the strands are joined at some of the junctions. In contrast, the capillary strands of the macrostructure layer are formed by chemically cross-linking and thereby bonding together the gel particles at these intersections. Accordingly, there are no strands that can cross over one another at the junctions. Rather the strands are formed only after the gel particles are interconnected.

For these additional reasons, claim 39 is further submitted to be non-obvious in view of and patentable over the references of record.

Claim 51

Claim 51 as amended herein is directed to an absorbent structure for absorbing liquid that comprises an absorbent member that is at least partially made of fibers and a reinforcing member for maintaining the structural integrity of the absorbent structure, that is at least partially embedded in the absorbing member and that has a non-uniform transverse width. The reinforcing member has openings therein. At least some of the fibers of the absorbent member extend through the

openings in the reinforcing member and are entangled with other fibers of the absorbent member.

Amended claim 51 is submitted to be non-obvious in view of and patentable over the references of record, and in particular Hsueh et al., for substantially the same reasons as claim 20. That is, whether considered alone or in combination the references fail to disclose or suggest fibers of the absorbent member extending through openings in the reinforcing member and being entangled with other fibers of the absorbent member.

Claims 52-65 depend directly or indirectly from claim 51 and are submitted to be non-obvious in view of and patentable over the reference of record for at least the same reasons as claim 51.

Claim 58

Claim 58 depends from claim 51 and further recites that the reinforcing member is comprised of strands arranged to cross over one another at junctions to define openings in the web and that the strands are joined at some of the junctions.

Claim 58 is further submitted to be non-obvious in view of and patentable over the references of record for substantially the same reasons as claim 39.

Claim 60

Claim 60 depends from claim 51 and further recites that the reinforcing member is relaxed from a stretched condition in which connection of the reinforcing member to the absorbent member is made. Hsueh et al. clearly fail to teach or otherwise even suggest such a feature. Rather, if anything, Hsueh et al. at best teach that the absorbent composite may expand slightly


upon wetting. But there is no disclosure of the absorbent composite relaxing from the stretched condition.

For these additional reasons, claim 60 is further submitted to be non-obvious in view of and patentable over the references of record.

CONCLUSION

In view of the foregoing, favorable consideration and allowance of claims 20-27, 29-43, 51-65 and 70 is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "R. L. Bridge". The signature is fluid and cursive, with the first and last names being more prominent.

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